

글로벌 ICT 표준 컨퍼런스 2022

Global ICT Standards Conference 2022

2022. 11.9.(수)~11.(금)
서울 양재 엘타워 오르체홀(5F)

ICT 포럼 성과 발표회

웹 표준 기술 융합 포럼

류지웅. 국장. 한국공유경제협회

글로벌 ICT 표준 컨퍼런스 2022

Global ICT Standards Conference 2022

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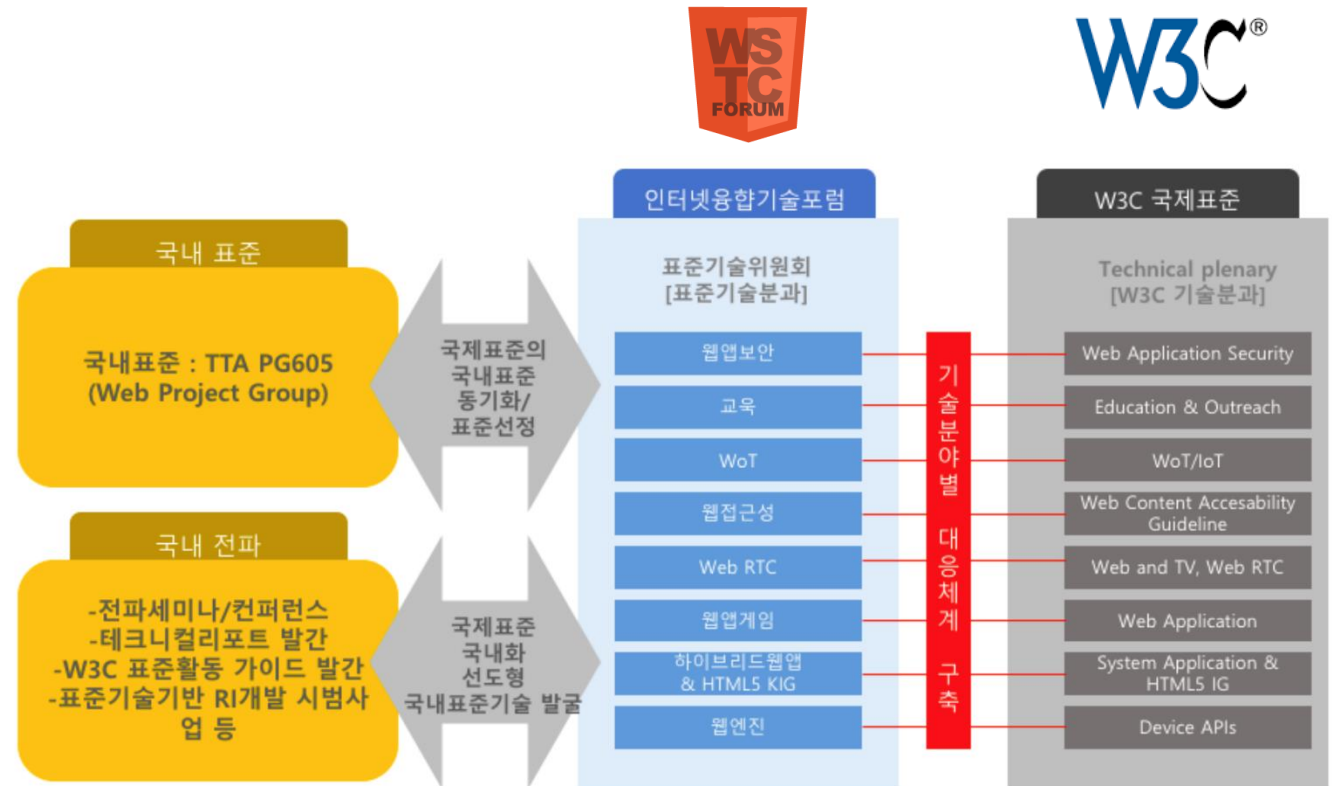
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웹표준기술융합포럼 소개

웹표준기술융합포럼

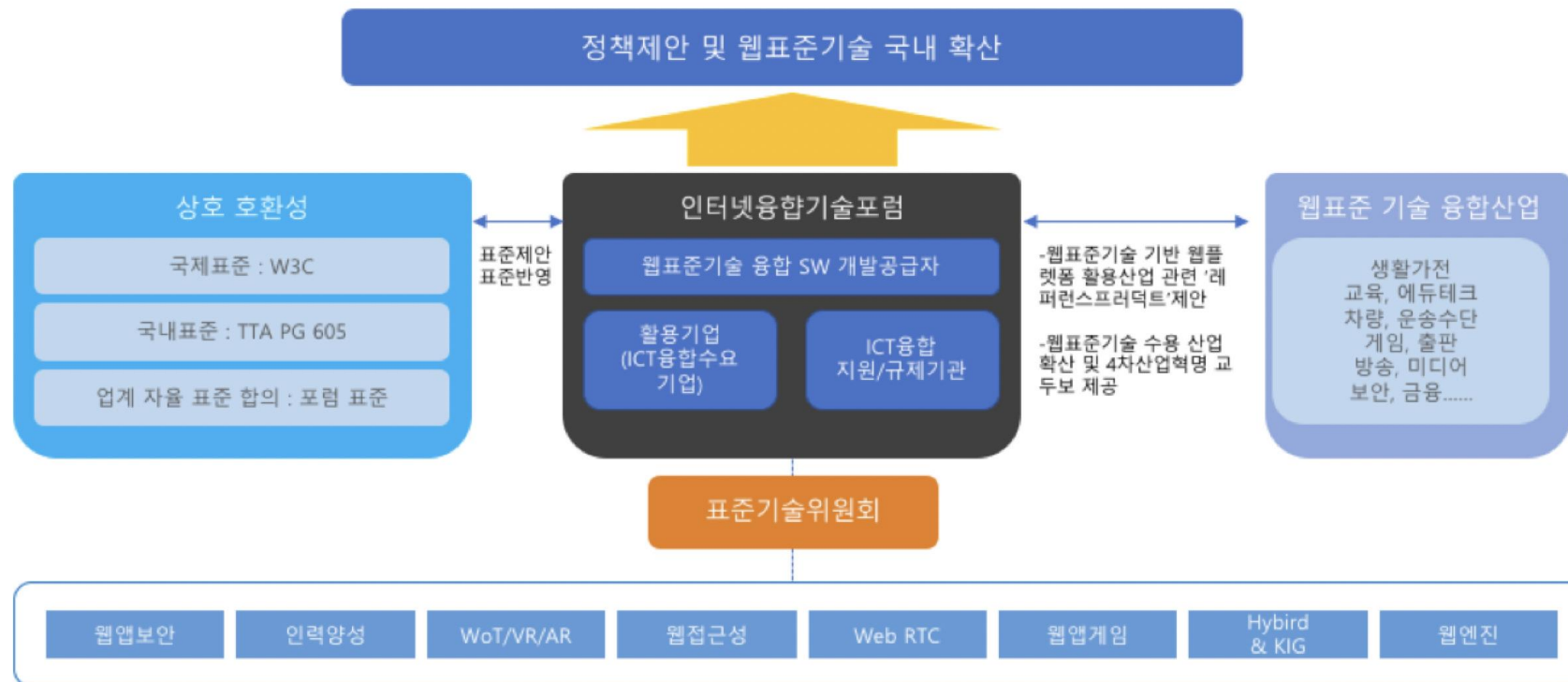
본 포럼은 W3C의 미래 포럼으로, 1)국내 표준기술의 W3C 국제 표준 반영, 2)W3C 표준의 TTA 단체표준 제정, 3)시의성 있는 웹표준기술 융합 프로젝트의 국내개발 지원을 위한 W3C 국제 표준의 국내전파 활동을 수행 함.

※ W3C는 월드와이드웹 컨소시엄으로 1994년 10월 월드와이드웹(WWW) 창시자인 팀 버너스 리를 중심으로 창립됨. 현재 Apple, Google, Amazon 등 IT전문 기업 500여 회원기업으로 구성



웹표준기술융합포럼 소개

포럼 구조 및 역할



웹표준기술융합포럼 소개

포럼활동



W3C™ overview schedule videos registration▼ practical▼ about help

T P A C 2 0 2 2

12-16 September hybrid meeting

On this page:
 > Registration
 > Schedule
 > Venue
 > Get help

W3C TPAC 2022
 TPAC 2022 is now over. Our thanks to all who participated!

Please, give your feedback on TPAC 2022 in the online survey! (until the 1st of November 2022)

W3C HTML5 Conference 2020
 Web Solution Online Exhibition

국내 웹 표준 확산 도모를 위한 국제 웹 표준(W3C) 기반의 최신 기술 및 서비스 동향과 미래를 전망하는 컨퍼런스와 웹 표준 기반의 솔루션을 소개하는 전시회입니다.

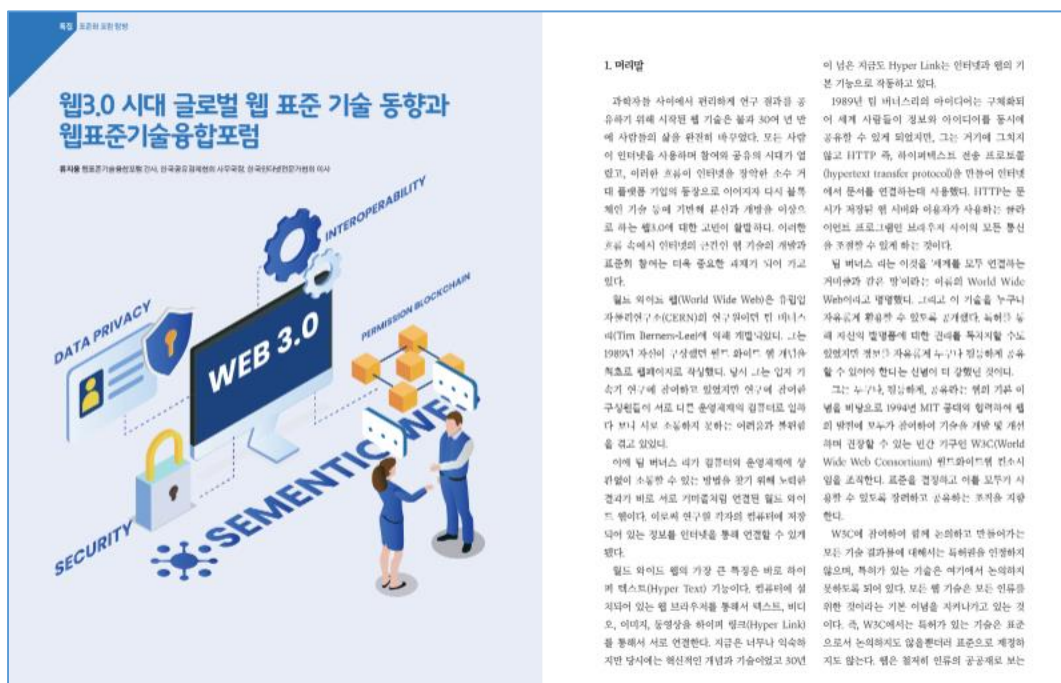
W3C HTML5 Conference 2020

개최 기간 2020. 10. 19(월), 13:00 ~ 17:30

접 수 처  경품 이벤트 참여를 위해서는 사전 등록이 필요하며, 경품 발송을 위해 휴대폰 번호를 꼭 입력해주세요!
 ※ 휴대폰 번호 미입력시 이벤트 참여가 제한됩니다.



포럼활동



2022 W3C 표준화 동향

포럼 표준 제정 현황

1. Verifiable Credentials Data Model 1.0
2. Decentralized Identifiers (DIDs) v1.0
3. Use Cases and Requirements for Decentralized Identifiers
4. Accessibility Conformance Testing (ACT) Rules Format 1.0
5. Data Catalog Vocabulary (DCAT) - Version 2
6. WebAssembly Core Specification
7. WebAssembly JavaScript Interface
8. WebAssembly Web API
9. CSS Writing Modes Level 3
10. Trace Context Level1
11. CSS Containment Module Level
12. Web Audio API 1.0
13. Indexed database API 2.0
14. WebAssembly Core Specification
15. Web of Things(WoT) Architecture
16. Web of Things (WoT) Thing Description
17. Payment Method Identifiers

W3C WG 기고 현황

Relationship between VISS and Gen2 transport #336	W3C	w3c/automotive
Adding extended attributes to Web IDL definition	W3C	w3c/webnn
Merge pull request w3c#13 from w3c/gh-pages	W3C	w3c/automotive
Undefined for methods of 3.8. Execution #100	W3C	webmachinelearning/webnn
Rebase 86.0.4240.110 #785	W3C	triplebanana/triple_banana3 231
외 15개 내외		

2022 W3C

포럼 표준 제정 현황



W3C(World Wide Web Consortium)는 웹에 대한 모든 표준 및 기술 개발 등을 총괄해 국제 표준화를 주도하는 비영리단체로 HTML5(HyperText Markup Language 5), 웹 접근성(Web Accessibility) 및 XML(eXtensible Markup Language) 등을 표준화하는 등 인터넷 기술의 국제표준을 개발하였으며, 최근에는 웹을 기반으로 커넥트드카, 페이먼트, 머신러닝, 블록체인 등의 영역으로 표준 개발을 확장하고 있음

Vision

W3C's vision for the Web involves participation, sharing knowledge, and thereby building trust on a global scale.

Web for Rich Interaction

The Web was invented as a communications tool intended to allow anyone, anywhere to share information. For many years, the Web was a "read-only" tool for many. Blogs and wikis brought more authors to the Web, and social networking emerged from the flourishing market for content and personalized Web experiences. W3C standards have supported this evolution thanks to strong architecture and design principles. Learn more about:

- [Web Design and Applications](#)
- [Web Architecture](#)

Web of Data and Services

Some people view the Web as a giant repository of linked data while others as a giant set of services that exchange messages. The two views are complementary, and which to use often depends on the application. Learn more about:

- [Essential XML Technologies](#)
- [Semantic Web](#)
- [Web of Services](#)

Web of Trust

The Web has transformed the way we communicate with each other. In doing so, it has also modified the nature of our social relationships. People now "meet on the Web" and carry out commercial and personal relationships, in some cases without ever meeting in person. W3C recognizes that trust is a social phenomenon, but technology design can foster trust and confidence. As more activity moves on-line, it will become even more important to support complex interactions among parties around the globe. Learn more about:

- [Semantic Web](#)
- [XML Security, Web of Services Security](#)
- [Privacy](#)

2022 W3C

W3C 표준 제정단계

1. Working Draft (WD) : 초안
2. Candidate Recommendation (CR) : 후보권고안
3. Proposed Recommendation (PR) : 제안권고안
4. W3C Recommendation(REC) : 권고안

2022 표준 진행 상황

Status report of active W3C specifications

The information on this public dashboard combines data on W3C Working Groups and specifications last updated on , and data on specification milestones manually maintained in [on-line spreadsheets](#) (W3C Member-only), last obtained on .

414 active specifications are tracked (237 aiming to Recommendation)

Upcoming wide reviews

Wide review planned in the upcoming 4 months

1. [Incremental Font Transfer](#) (Web Fonts Working Group) : 2021-12-30
2. [Web MIDI API](#) (Audio Working Group) : 2020-03-30
3. [Web of Things \(WoT\) Thing Description 1.1](#) (Web of Things Working Group) : 2021-03-30
4. [WebXR Device API](#) (Immersive Web Working Group) : 2021-12-30
5. [WebXR Augmented Reality Module - Level 1](#) (Immersive Web Working Group) : 2021-12-30
6. [Data Catalog Vocabulary \(DCAT\) - Version 3](#) (Dataset Exchange Working Group) : 2022-03-30
7. [DOM](#) (HTML Working Group) : 2019-09-30
8. [CSS Cascading and Inheritance Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2020-09-30
9. [CSS Color Module Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2020-09-30
10. [CSS Conditional Rules Module Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2022-03-30
11. [CSS Fonts Module Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2020-09-30
12. [CSS Text Module Level 3](#) (Cascading Style Sheets (CSS) Working Group) : 2020-09-30
13. [WebTransport](#) (WebTransport Working Group) : 2022-09-30
14. [MiniApp Packaging](#) (MiniApps Working Group) : 2022-09-30
15. [MiniApp Manifest](#) (MiniApps Working Group) : 2022-09-30
16. [MiniApp Lifecycle](#) (MiniApps Working Group) : 2022-09-30

2022 W3C

Upcoming CR

Candidate Recommendation planned in the upcoming 4 months

1. [Web MIDI API](#) (Audio Working Group) : 2020-09-30
2. [Permissions](#) (Web Application Security Working Group) : 2022-06-30
3. [Accelerometer](#) (Devices and Sensors Working Group) : 2019-12-30
4. [Ambient Light Sensor](#) (Devices and Sensors Working Group) : 2019-12-30
5. [Battery Status API](#) (Devices and Sensors Working Group) : 2019-12-30
6. [Generic Sensor API](#) (Devices and Sensors Working Group) : 2019-12-30
7. [Magnetometer](#) (Devices and Sensors Working Group) : 2019-12-30
8. [Orientation Sensor](#) (Devices and Sensors Working Group) : 2019-12-30
9. [VISS version 2 - Core](#) (Automotive Working Group) : 2022-06-30
10. [VISS version 2-Transport](#) (Automotive Working Group) : 2022-06-30
11. [CSS Color Module Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2022-03-30
12. [CSS Conditional Rules Module Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2022-06-30
13. [CSS Fonts Module Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2021-03-30
14. [W3C Accessibility Guidelines \(WCAG\) 3.0](#) (Accessibility Guidelines Working Group) : 2021-12-30
15. [Core Accessibility API Mappings 1.2](#) (Accessible Rich Internet Applications Working Group) : 2022-09-30
16. [Data Catalog Vocabulary \(DCAT\) - Version 3](#) (Dataset Exchange Working Group) : 2022-06-30
17. [WebXR Device API](#) (Immersive Web Working Group) : 2021-12-30
18. [WebXR Augmented Reality Module - Level 1](#) (Immersive Web Working Group) : 2021-12-30
19. [Media Source Extensions™](#) (Media Working Group) : 2020-06-30
20. [Picture-in-Picture](#) (Media Working Group) : 2020-12-30
21. [Media Session Standard](#) (Media Working Group) : 2020-12-30
22. [Media Capabilities](#) (Media Working Group) : 2020-06-30
23. [DOM](#) (HTML Working Group) : 2019-12-30

2022 W3C

469
members

42 WG
9 IG

347 SPEC
168 Rec
Aim

Upcoming PR

Proposed Recommendation planned in the upcoming 6 months

1. [Timed Text Markup Language 2 \(TTML2\)](#) (Timed Text Working Group) : 2021-06-30
2. [Beacon](#) (Web Performance Working Group) : 2020-06-30
3. [Navigation Timing Level 2](#) (Web Performance Working Group) : 2020-03-30
4. [Media Capture and Streams](#) (Web Real-Time Communications Working Group) : 2022-06-30
5. [VISS version 2 - Core](#) (Automotive Working Group) : 2023-03-30
6. [VISS version 2-Transport](#) (Automotive Working Group) : 2023-03-30
7. [CSS Cascading and Inheritance Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2021-03-30
8. [Media Queries Level 4](#) (Cascading Style Sheets (CSS) Working Group) : 2022-06-30
9. [Web Content Accessibility Guidelines \(WCAG\) 2.2](#) (Accessibility Guidelines Working Group) : 2022-06-30
10. [W3C Accessibility Guidelines \(WCAG\) 3.0](#) (Accessibility Guidelines Working Group) : 2022-12-30
11. [Accessible Rich Internet Applications \(WAI-ARIA\) 1.2](#) (Accessible Rich Internet Applications Working Group) : 2022-09-30
12. [Data Catalog Vocabulary \(DCAT\) - Version 3](#) (Dataset Exchange Working Group) : 2022-12-30
13. [Web Application Manifest](#) (Web Applications Working Group) : 2022-03-30
14. [Media Source Extensions™](#) (Media Working Group) : 2021-06-30
15. [Picture-in-Picture](#) (Media Working Group) : 2021-06-30
16. [Media Session Standard](#) (Media Working Group) : 2021-06-30
17. [Media Capabilities](#) (Media Working Group) : 2021-03-30
18. [DOM](#) (HTML Working Group) : 2020-03-30

2022 Business Focus

Web Payments & Web Commerce

W3C's payments standards enable a streamlined checkout process, giving a consistent user experience across the web with lower front-end development costs for merchants. Users can store and reuse information and more quickly and accurately complete online transactions.



Secure Payment Confirmation (SPC)

A 2021 pilot of [Secure Payment Confirmation](#) (SPC) from Stripe [showed](#) that users completed **8% more purchases, that authentication was three times faster than one time passwords, and with negligible fraud.**

This remains the focus of both the [Web Payments Working Group](#) and [Web Payment Security Interest Group](#), and it was encouraging that in February 2022 the W3C Technical Architecture Group (TAG) offered a [positive review](#).

Signaling strong industry interest, EMVCo [announced](#) support for SPC in version 2.3 of the EMV® 3-D Secure specification. W3C Members Airbnb and Adyen began their SPC pilot in January 2022 and Stripe has indicated plans to conduct a second experiment.

Related work taking place in parallel:

Media and entertainment

The [media and entertainment activity](#) ([Roadmap: overview of media technologies for the web](#)) tracks and standardizes media-related capabilities and features needed to create immersive experiences. HTML5, [TTML](#) and [TTML](#) profiles, and [WebVTT](#) brought standard audio, video and captions to the web and have revolutionized the media pipeline and media consumption worldwide, turning the web into a professional platform fully suitable for the delivery of media content.



Beyond media streaming, work on WebGPU and WebTransport improves the experience of media on the web, by focusing on rendering, computing and transport technologies.

Reinforce core media support

- New version of the [Media Source Extensions](#) (MSE) standard adds a new codec-switching feature for ad-insertion scenarios, and to make it usable from workers and avoid [jank](#).
- Color-support enhancement is discussed in the [Color on the Web Community Group](#). This includes adding HDR support to PNG in the PNG Working Group and possible work on a [Color API](#).
- To improve support for media timed events (emsg, data cues), [DataCue](#) is incubated in [WICG](#), and browser-vendor representatives are engaged within the Media & Entertainment Interest Group. The need to expose SEI (Supplemental Enhancement Information) metadata events has recently emerged in that space.

Digital Publishing

The web is the universal publishing platform and both impact each other. [Publishing@W3C](#) focuses on typography and layout, accessibility, usability, portability, distribution, archiving, offline access, print on demand, and reliable cross-referencing. The work done in this space benefits at the same time the traditional "trade" publishers, ebook reading system manufacturers, but also publishers of audiobooks, scholarly journals or educational materials, library scientists or browser developers.



EPUB 3 Working Group

The [EPUB 3 Working Group](#) maintains and clarifies the EPUB 3 family of specifications, represents the EPUB community in W3C, and supports EPUB 3 content creators and consumers. An important outcome of the group is to significantly increase the interoperability of EPUB publications and reading systems.

Without changing the technical requirements, the group is actively improving the work to streamline and make the specifications more readable: [EPUB 3.3](#) (the authoring requirements for EPUB Publications), [EPUB 3.3 Reading Systems](#) and [EPUB Accessibility 1.1](#) (both defining conformance requirements).

Network & communications

The web is the open platform for mobile. Telecommunication service providers and network equipment providers have long been critical actors in the deployment of web technologies. As the web platform matures, it brings richer and richer capabilities to extend existing services to new users and devices, and propose new and innovative services.

Real-Time Communications (WebRTC)

With [WebRTC a complete standard](#) recognizing the interoperability of web browsers to enable real-time audio/video communications, the [WebRTC Working Group](#) has shifted effort towards bringing companion specifications Media Capture and Streams, and Screen Capture, to Recommendation.

In parallel, the group is reviewing technical proposals that enable the [new use cases for WebRTC](#):

- [WebRTC Encoded Transform](#), which among other things will open the way for fully end-to-end encrypted teleconferences in web browsers
- [MediaStreamTrack Insertable Media Processing using Streams](#), which allows real-time processing of raw video

To ensure the resulting processing pipeline is provided as the smoothest performance, the latter work is coordinated and shared with the Media Working Group, the Web Machine Learning Working Group and the GPU on the Web Working Group.

WebTransport

Chartered in September 2020 and operating in collaboration with the IETF's WEBTRANS Working Group, the [WebTransport Working Group](#) exposes low-level network primitives inspired by those from the WebRTC API, enabling them in more contexts, in particular in pure client/server situations. The group iterates regularly on its specification, [WebTransport API](#).



2022 Business Focus

Automotive and transportation

Shared data associated with transportation has great potential for improving the user experience, with opportunities to offer enhanced information, entertainment, efficiency, maintenance, safety, and convenience. Parallel advances in sensors, communications, cloud and data analytics infrastructure, geophysical mapping, machine learning, mobile devices, user interfaces and related areas have created a rich foundation that can offer tremendous opportunity for creating value. The work in automotive and transportation addresses the need for standards in a connected vehicle ecosystem, modes of transportation and related services.

W3C Automotive Working Group

The W3C [Automotive Working Group](#) is designing [VISS version 2](#) as a replacement for the first [Vehicle Information Service Specification](#) (VISS), drawing from extensive experience in production vehicles.

With a goal to create a rich ecosystem for vehicles by running on the "head unit", the standard provides an access method to a common data model for all the signals information available on vehicles, such as engine temperature, fuel/charge level, range, tire pressure etc. It currently knows about a thousand and will be growing to accommodate advances such as electrification, autonomous and driver assist technologies.

VISS 2 includes HTTP REST in addition to WebSocket, addresses access control authorization, and a robust authentication model. This version also improves data feed subscriptions. A reference implementation is currently exploring supporting the Message Queuing Telemetry Transport (MQTT) protocol used in the automotive industry.

After incubation in the companion Automotive and Transportation Business Group, the Working Group published first public working drafts of [Vehicle Signal Specification Ontology](#) (VSSo) and [Vehicle Signal Specification Core Ontology](#) (VSSo Core).



Web of Things

W3C's [Web of Things](#) work is designed to bridge disparate technology stacks to allow devices to work together and achieve scale, thus enabling the potential of the Internet of Things by eliminating fragmentation and fostering interoperability. The Web of Things complements existing IoT ecosystems to reduce the cost and risk for suppliers and consumers of applications that create value by combining multiple devices and information services. There are many sectors that will benefit, e.g. smart homes, smart cities, smart industry, smart agriculture, smart healthcare and many more.

Watch [Web of Things videos](#) (introduction, updates, tutorials, interviews)



Web of Things Interest Group

The [Web of Things Interest Group](#) brings together stakeholders to explore ideas prior to standardization by liaising with external standards development organizations and industry alliances. The group seeks to build a shared understanding of the Web of Things and to identify opportunities for initiating W3C standards-track work.

In February, the group [rechartered](#) for two years, adding marketing and outreach to its scope which the group aims to fulfill via the development of supporting materials such as implementation guidelines and tutorials, and the organization of PlugFest and Testing events.

Web advertising

Web advertising is about making online advertising more effective and privacy-preserving, by identifying areas where standards and changes in the web itself can improve the ecosystem and experience for users, advertisers, publishers, distributors, ad networks, agencies, and others.



Private Advertising Technology Community Group

Launched in February 2022, the [Private Advertising Technology Community Group](#) is open to all and free to join. The group's mission is to incubate web features and APIs that support advertising while acting in the interests of users, in particular providing strong privacy assurances. Read the [January 2022 article on adexchanger](#).

The group will work alongside existing groups: W3C's [Privacy Interest Group](#) (PING), W3C's [Privacy Community Group](#) and the [Improving Web Advertising Business Group](#).

Improving Web Advertising Business Group

The [Improving Web Advertising Business Group](#) formed as a cross-industry forum for business representatives to discuss aspects of online advertising. It is addressing the joint goals of improving the web's support for advertising and meeting users' demands for privacy from cross-site tracking. The group also oversees liaisons with existing Working Groups and intends to create new Working Groups as needed.

The group aims to refine and incubate [ideas and proposals](#), match how they fit with important [use-cases](#) for privacy-protective advertising on the Web.

2022 Recent Highlight

Audio

The [Web Audio Working Group](#) adds advanced sound and music synthesis capabilities to the Open Web Platform.

Web Audio 1.0, which is implemented in all browsers, enables synthesizing audio in the browser. Audio operations are performed with audio nodes, which are linked together to form a modular audio routing graph. Multiple sources — with different types of channel layout — are supported. This modular design provides the flexibility to create complex audio functions with dynamic effects.

Having published the [Web Audio API 1.0 as a W3C Recommendation](#) in June 2021, the group is discussing various new features as updates for the specification.

A new charter for the group is being reviewed by the W3C Members. The scope remains unchanged but instead of starting a new specification (version 2) of the Web Audio API, the group plans to incrementally update the existing Web Audio API Recommendation.

CSS

CSS is a critical part of the Open Web Platform. The [CSS Working Group](#) gathers requirements for better pagination support and advanced font handling, as well as intelligent (and fast!) scrolling and animations. CSS is a [collection](#) of over a hundred specifications, referred to as 'modules'. The current state of CSS is defined by a [snapshot](#), updated once a year. The group also publishes an [index](#) defining every term defined by CSS specifications.

Since our last report, the group published the [CSS Snapshot 2021](#), which collects into one definition all the specs that together form the current state of Cascading Style Sheets (CSS) as of 2021.

- [CSS Counter Styles Level 3](#) was added to the list of specifications that the group considers stable
- [CSS Scrollbars Styling Module Level 1](#) is becoming fairly stable but has limited implementation experience
- Work has been ongoing on multiple modules, including [Nesting](#), [Color](#), [Color Adjustment](#), [Cascading and Inheritance](#), and [Conditional Rules](#)

Decentralized Identifier

The [Decentralized Identifier Working Group](#) specifies digital identifiers that are easy to create, decentralized, persistent, resolvable, and cryptographically verifiable. Decentralized Identifiers (DIDs) are defined as specific URI schemes that have an associated DID Document which contains primarily cryptographic information that allows any agent to check the integrity of the defined subject; allows to exchange private information with the subject and to get information on the services (e.g., Web sites) related to it. The DID documents are specified via an abstract data model that can be serialized in various formats and can be stored on various types of distributed ledgers, on Web storage systems.

The group has published [DID Identifiers v1.0](#) as a Proposed Recommendation which is when W3C Members give their final review, and is the last step before publication as a Web standard. Some Formal Objections have been raised against the document by W3C Members, and the decision on those is still pending at the time of publication of this report.

The group plans to recharter after expiration of the current charter in June 2022. The details of the upcoming charter will be informed by the resolution of the Formal Objections.

Web Fonts

Web Fonts are used for languages such as Chinese, Japanese and Korean, where downloading entire fonts is too costly; and Arabic and Indic languages, where subsetting Web Fonts often do not work correctly. The Web Fonts Working Group develops specifications that allow the interoperable deployment of downloadable fonts on the Web, with a focus on Progressive Font Enrichment (PFE) as well as maintenance of WOFF Recommendations.

The [Web Fonts Working Group](#) is one of the recipients of the [3rd Annual Technology & Engineering Emmy® Awards](#). The award, jointly won with MPEG, is for the "Standardization of Font Technology for Custom Downloadable Fonts and Typography for Web and TV Devices".

The group continues work on [Incremental Font Transfer](#) which will merge with [Incremental Font Transfer via Range Request](#). This collection of technologies allows to load only the portions of a font that is actually needed, which greatly speeds up rendering and reduces data transfer. A font can be loaded over multiple requests, each incrementally adding additional data.

2022 Recent Highlight

HTML

HTML is the core markup language of the World Wide Web, a foundational technology upon which websites are built. Originally, HTML was primarily designed as a language for semantically describing scientific documents. Its general design, however, has enabled it to be adapted, over the subsequent years, to describe a number of other types of documents and even applications.

The [HTML Working Group](#) has been conducting the wide review to update the snapshots of [HTML](#) and [DOM](#), in collaboration with the WHATWG. A [recent agreement between W3C and WHATWG](#) includes work on extended HTML Ruby markup under the W3C Recommendation track. This will be a derived document with some textual copying from WHATWG HTML and W3C HTML Ruby Markup Extensions.

The group is in the process of drafting a [new charter](#) and was [extended](#) until 30 April 2022 to allow additional time for the group to resolve the issues raised during the horizontal review of the new charter.

Web Machine Learning

Enabling efficient machine learning inference in the browser, as opposed to in the cloud, enhances privacy and allows local processing requiring low latency, such as object detection in immersive web experiences, as well as access to platform capabilities and dedicated hardware.

The [Web Machine Learning Working Group](#) launched in April 2021 to develop APIs for enabling efficient machine learning inference in the browser.

The group published a First Public Working Draft of the [Web Neural Network API](#) as well as an [Web Neural Network API Explainer](#). The group is now charting its [path toward a first Candidate Recommendation](#), with a focus on integration with other technologies (WebGPU, media processing) and integrating input from privacy, security and ethical reviews.

Math

MathML is a low-level specification for the Web and beyond, which makes mathematics first-class on the Web so that mathematical and scientific content is well displayed, accessible to people with disabilities, and searchable just as HTML has enabled this functionality for text.

The [Math Working Group](#), chartered in April 2021, is continuing its work to revise Mathematical Markup Language, or MathML, so that features of the modern Web platform are compatible. MathML is a low-level specification for the Web and beyond, whose markup language makes mathematics first-class on the Web by describing mathematical notation and capturing both its structure and content, so that mathematical and scientific content is well displayed, accessible to people with disabilities, and searchable on the World Wide Web, just as HTML has enabled this functionality for text.

The group is iterating on [MathML Core](#), which defines a core subset of MathML that is suitable for browser implementation.

MiniApps

MiniApps are small, install-free, fast-loading programs that run inside a larger native application or directly run in the operating system. MiniApps leverage both Web technologies like CSS and JavaScript as well as the capabilities of native applications.

The [MiniApps Working Group](#) launched in January 2021 to produce specifications that facilitate the development of interoperable and robust MiniApps.

The working group published [MiniApp Packaging](#) as a First Public Working Draft; rewrote [MiniApp Addressing](#) (previously called *MiniApp URI Scheme*) to use http/https as the URI scheme and has resolved to publish the [MiniApp Widget Requirements](#) document as a Note. They are updating the [MiniApp Standardization White Paper](#), including the main text and the [comparison of APIs](#) and discussing new features like [Streaming](#).

The [MiniApps Ecosystem Community Group](#) continues to discuss and incubate new proposals, including [Common UI Components](#) and [IoT](#).

2022 Recent Highlight

Timed Text

The [Timed Text Working Group](#) is chartered to develop W3C Recommendations for media online captioning by developing and maintaining new versions of the Timed Text Markup Language (TTML) and WebVTT (Web Video Text Tracks) based on implementation experience and interoperability feedback, and the creation of semantic mappings between those languages.

The group published a working draft of [IMSC Hypothetical Render Model](#), which specifies a model that constrains the complexity of an IMSC Document Instance.

Verifiable Credentials

The mission of the [Verifiable Credentials Working Group](#) (VCWG) is to make expressing and exchanging credentials that have been verified by a third party easier and more secure on the Web. The group was formerly known as Verifiable Claims Working Group.

The Verifiable Credentials Working Group published an updated Recommendation of [Verifiable Credentials Data Model v1.1](#) which is a slight update of the [Recommendation published 2 years ago](#).

The group, which is chartered until the end of April, is working on a [new Working Group charter](#) with the goal of publishing a version 2.0 of the Verifiable Credentials Data Model specification, as well as specifications to express proofs of integrity of verifiable credentials in an interoperable manner. The charter is expected to be sent for AC Review in April 2022.

Web Applications

The [Web Applications Working Group](#) produces specifications that facilitate the development of client-side web applications.

The group is among those [extended](#) while Formal Objections raised against the proposed charter are resolved. Recent publications include updates for [Indexed Database API 3.0](#) and [Screen Orientation API](#).

Web Performance

The [Web Performance Working Group](#) provides methods to measure aspects of application performance of user agent features and APIs.

The Web Performance group published updates to [High Resolution Time](#) and [Resource Timing](#).

Next Vision

포럼 역할

- Web RTC 관련기술 표준 및 리포트
- HTML5 융합 및 응용기술 (API, 성능평가, 상호호환성 검증) 표준
- HTML5 웹기반 인증기술 국내 표준 및 국제 표준
- DID, Blockchain 관련 기술의 국내 표준 및 리포트
- Web Application 및 System Application API 표준

활용사례

- Naver 브라우저 웨일 (국내 유일의 웹브라우저)
- 국내 사용성 분석을 통한 편의 UX강화 및 다양한 특화 영역 협업 중
- 웹인증서기반 서명을 위한 웹AP(2019년 포럼 표준)
 - 신한은행을 비롯 타 은행으로 확대 적용 중

no	구분	회원사명	
1	산업체(대기업)	삼성전자	
2	산업체(대기업)	LG전자	
3	산업체(대기업)	네이버	
4	산업체(대기업)	11번가	
5	산업체(중소벤처기업)	게임빈	
6	산업체(중소벤처기업)	플라이하이	
7	연구기관(기타)	한국전자통신연구원	
8	산업체(중소벤처기업)	이갈리아	
9	산업체(중소벤처기업)	구루미	
10	산업체(중소벤처기업)	페이게이트	
11	산업체(대기업)	카카오	
12	산업체(중소벤처기업)	하이브랩	
13	산업체(중소벤처기업)	리모트몬스터	
14	산업체(중소벤처기업)	유프리즘	
15	산업체(중소벤처기업)	렛시	
16	산업체(중소벤처기업)	인스웨이브시스템즈	
17	산업체(중소벤처기업)	잉카인터넷	
18	산업체(중소벤처기업)	카테노이드	
19	산업체(중소벤처기업)	시루정보통신	
20	산업체(중소벤처기업)	소프트보울	
21	산업체(중소벤처기업)	SAT정보	
22	산업체(중소벤처기업)	포덱스	
23	산업체(중소벤처기업)	깃플	
24	산업체(중소벤처기업)	루이테크놀로지	
25	연구기관(기타)	한국인터넷전문가협회	
26	산업체(중소벤처기업)	아이디어링크	
27	산업체(중소벤처기업)	매직에코	
28	학계	동의대학교	
29	산업체(중소벤처기업)	카테노이드	
30	산업체(중소벤처기업)	SCE korea	
구분	개수	백분율	
산업체(대기업)	5	17%	
산업체(중소벤처기업)	23	77%	
연구기관(기타)	1	3%	
학계	1	3%	
합 계	30	100%	

Thank you

류지웅, 국장, 한국공유경제협회(웹표준기술융합포럼)
rjiwoong@sharingeconomy.kr

디자인 가이드 - 폰트 / 컬러

폰트

굵은 글씨

나눔스퀘어 ExtraBold

얇은 글씨

나눔스퀘어 Bold

나눔스퀘어 Light

글로벌 ICT 표준 컨퍼런스 2022

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컬러

